

WHAT IS CLAIMED IS:

1. An information processing control method that realizes a function of information processing by downloading a program and data to an information processing unit based on an information from an operating unit, comprising:
  - judging validity of the information from the operating unit;
  - determining whether to download the program and the data based on the validity judged; and
  - making a request, upon determining to download the program and the data, for downloading the program and the data to the information processing unit.
2. The information processing control method according to claim 1, wherein the program and the data requested are downloaded to a digital signal processor.
3. The information processing control method according to claim 2, wherein the digital signal processor has a plurality of functions, and each of the functions works as a discrete controlling component.
4. An image processing control method that realizes a function of image processing by downloading a program and data to an image processing unit based on an information from an operating unit, comprising:

judging validity of the information from the operating unit;  
determining whether to download the program and the data  
based on the validity judged; and  
making a request, upon determining to download the program  
5 and the data, for downloading the program and the data to the image  
processing unit.

5. An image processing control method that realizes a function of  
image processing by downloading a program and data to an image  
10 processing unit based on an information from an operating unit,  
comprising:

translating the information from the operating unit into  
information that is recognized by the image processing unit;  
judging validity of information based on the information  
15 translated;  
determining whether to download the program and the data  
based on the validity judged; and  
making a request, upon determining to download the program  
and the data, for downloading the program and the data to the image  
20 processing unit.

6. An image processing control method that realizes a function of  
image processing by downloading a program and data to an image  
processing unit based on an information from an operating unit,  
25 comprising:

converting the information from the operating unit into an internal variable based on a request for controlling image processing from a main control software;

5 determining, based on a status of previously acquired resource and current process information, a resource that has to be acquired to make a response to a request for the resource;

determining whether the process is executable with the resource requested;

10 converting the internal variable, upon determining that the process is executable with the resource requested, into detailed information required for downloading the program and the data; and

downloading the detailed information to the image processing unit based on a request for executing download.

15 7. An apparatus for controlling image processing comprising:

an image processing unit that realizes a function of image processing by downloading a program and data;

a first converting unit that converts information from an operating unit into information for downloading the program and the data to the image processing unit; and

20 a downloading unit that downloads the program and the data to the image processing unit based on the information converted by the first converting unit.

8. The apparatus for controlling image processing according to  
claim 7, wherein the downloading unit includes  
a translating unit that translates the information from the  
operating unit into information recognized by the first converting unit;  
5 and  
a download request unit that makes a request for downloading  
the program and the data to the image processing unit based on the  
information translated.

10 9. The apparatus for controlling image processing according to  
claim 7, wherein the downloading unit includes  
a translating unit that translates the information from the  
operating unit into information recognized by the first converting unit;  
a second converting unit that converts information translated by  
15 the translating unit into detailed information for downloading the  
program and the data to the image processing unit; and  
a download request unit that makes a request for downloading  
the program and the data to the image processing unit based on the  
detailed information.

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10. The apparatus for controlling image processing according to  
claim 8, further comprising a common interface that is determined for  
each image processing, wherein  
the translating unit transmits the information translated to the  
25 download request unit via the common interface.

11. The apparatus for controlling image processing according to  
claim 8, wherein the translating unit performs a central management of  
the information from the operating unit.

5 12. The apparatus for controlling image processing according to  
claim 9, wherein the translating unit performs a central management of  
the information from the operating unit.

13. The apparatus for controlling image processing according to  
10 claim 8, wherein

the translating unit includes a translation table composed of  
request levels from the operating unit and corresponding combination of  
the program and the data to be downloaded, and

15 the translating unit translates the information from the operating  
unit based on the translation table.

14. The apparatus for controlling image processing according to  
claim 8, wherein

20 the download request unit includes an information table for  
managing the information translated by the translating unit, and  
the download request unit determines the program and the data  
to be downloaded to the image processing unit based on the  
information table.

15. The apparatus for controlling image processing according to  
claim 9, wherein

the download request unit includes an information table for  
managing the detailed information, and

5 the download request unit determines the program and the data  
to be downloaded to the image processing unit based on the  
information table.

16. The apparatus for controlling image processing according to  
10 claim 9, further comprising a common interface that is determined for  
each image processing, wherein

the translating unit transmits the information translated to the  
download request unit via the common interface.

15 17. The apparatus for controlling image processing according to  
claim 9, wherein

the second converting unit includes a conversion table  
composed of request levels from the operating unit and corresponding  
combination of the program and the data to be downloaded, and

20 the second converting unit determines the detailed information  
based on the conversion table.

18. The apparatus for controlling image processing according to  
claim 9, wherein the translating unit, the second converting unit, and  
25 the download request unit are managed for each image processing.

19. An apparatus for controlling image processing comprising:  
an image processing unit that realizes a function of image  
processing by downloading a program and data;  
a request managing unit that manages a request for single  
5 execution;  
a first converting unit that converts information from an  
operating unit into an internal variable;  
a resource managing unit that manages a resource to respond  
to the request for the single execution and a service of the image  
10 processing unit that has the resource;  
a second converting unit that converts the internal variable into  
detailed information for downloading the program and the data to the  
image processing unit; and  
a downloading unit that downloads the program and the data to  
15 the image processing unit based on the detailed information.

20. The apparatus for controlling image processing according to  
claim 19, wherein the request managing unit receives requests for  
setting parameters for image processing, executing the image  
20 processing, ending the image processing, and canceling the image  
processing, and transmits one of the requests to other units.

21. The apparatus for controlling image processing according to  
claim 19, wherein the request for the single execution is made from an  
25 instruction from the operating unit via a control unit that is provided at a

preceding stage of the apparatus.

22. The apparatus for controlling image processing according to claim 19, the resource managing unit, when managing the resource, 5 determines whether to perform an image processing control based on a status of current resources reserved.
  
23. The apparatus for controlling image processing according to claim 19, the resource managing unit, when managing the service, 10 determines a processing capability of the image processing unit that has the resource, and switches over the service to be provided according to the processing capability determined.
  
24. The apparatus for controlling image processing according to 15 claim 19, wherein
  - the second converting unit transmits the detailed information with a request for a download, and
  - the downloading unit downloads the detailed information to the image processing unit based on the request for the download.
  
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25. The apparatus for controlling image processing according to claim 19, wherein the downloading unit is provided for every image processing unit.

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26. The apparatus for controlling image processing according to  
claim 19, wherein the image processing unit is a digital signal  
processor.

5 27. The apparatus for controlling image processing according to  
claim 19, wherein the image processing unit is an image processing  
device.

10 28. The apparatus for controlling image processing according to  
claim 27, wherein the image processing device includes at least one of  
a scanner and a printer.

15 29. An image forming apparatus comprising:  
an image processing control apparatus that includes  
an image processing unit that performs image  
processing by downloading a program and data;  
a converting unit that converts information from an  
operating unit into information for downloading the program and the  
data to the image processing unit; and  
20 a downloading unit that downloads the program and the  
data to the image processing unit based on the information converted;  
and  
an image forming unit that forms an image on a recording  
medium based on image information that is processed by the image  
25 processing control apparatus.

30. A computer program for realizing a method of controlling image processing on a computer, the method realizing a function of information processing by downloading a program and data to an information processing unit based on information from an operating unit,

5 the method comprising:

judging validity of the information from the operating unit;

determining whether to download the program and the data based on the validity judged; and

making a request, upon determining to download the program

10 and the data, for downloading the program and the data to the information processing unit.

31. A computer program for realizing functions of each unit of an apparatus for controlling image processing on a computer, the

15 apparatus comprising:

an image processing unit that realizes a function of image processing by downloading a program and data;

a first converting unit that converts information from an operating unit into information for downloading the program and the

20 data to the image processing unit; and

a downloading unit that downloads the program and the data to the image processing unit based on the information converted by the first converting unit.

32. A computer-readable recording medium that stores a computer program for realizing a method of controlling image processing on a computer, the method realizing a function of information processing by downloading a program and data to an information processing unit

5 based on an information from an operating unit, the method comprising:

- judging validity of the information from the operating unit;
- determining whether to download the program and the data based on the validity judged; and
- making a request, upon determining to download the program

10 and the data, for downloading the program and the data to the information processing unit.

33. A computer-readable recording medium that stores a computer program for realizing functions of each unit of an apparatus for

15 controlling image processing on a computer, the apparatus comprising:

- an image processing unit that realizes a function of image processing by downloading a program and data;
- a first converting unit that converts information from an operating unit into information for downloading the program and the

20 data to the image processing unit; and

- a downloading unit that downloads the program and the data to the image processing unit based on the information converted by the first converting unit.